# 2005 Engineering Conference Breakout Sessions

**1. Traffic Signals Operations**
**Track**: Traffic & Safety and ITS/TOC
**Presenters**: Mark Taylor and Dave Kinnecom
**Synopsis**: This session will discuss the recent national signal report card. How did UDOT fare? Other topics included in the session will be:
• Signal Timing Fundamentals
• A review of UDOT's timing guidelines and procedures
• Loops vs. Video detection – When do I use one over the other?
• Yellow Trap – What is it and how do we avoid this situation?
• Volume-Density Timing – When and where do we use this option?
• Signal coordination – Saturated vs. under-saturated conditions
• Intersection modeling – How to properly setup a model

**2. Signal Maintenance and Construction**
**Track**: Traffic & Safety and ITS/TOC
**Presenters**: Troy Noall, Dale Lake, Grant Jackson, Clay Cottam
**Synopsis**: • Loop wiring – Problem areas related to placement in the road and in the signal cabinet
• Signal wiring problems – Will look at loops, field wiring in the cabinet, layout of cabinet
• Signal inspections – Common problems with new construction. Will look at typical problem areas.
• Grounding – Where and what should be grounded.
• Video detection - Will discuss issues related to camera placement, sun, shade, setup and different brands.
• Uniformity – Will discuss the importance of uniformity related to signal cabinet layout and setup among all four regions.
• Importance of IMSA certification and requirements of certification. Will review some of the testing details.

**3. Incorporating ITS into Projects**
**Track**: Traffic & Safety and ITS/TOC
**Presenters**: Brad Cameron, Mark Parry, Deryl Mayhew
**Synopsis**: Walk through the life of a project from the ITS perspective. Experience the excitement and the challenges of incorporating ITS elements into traditional projects. Learn how to streamline these elements and minimize potential obstacles through real-life examples of design and construction experience. Discover the resources available to assist in design and construction of these specialized components.

**4. Evaluation of Bangerter Highway Advance Warning Signal Installation**
**Track**: Traffic & Safety and ITS/TOC
**Presenters**: Grant Schultz, Stephen Lewis, and Mark Taylor, with Mack Christensen moderating
**Synopsis**: The Utah Department of Transportation (UDOT) has contracted with Brigham Young University (BYU) to evaluate the effectiveness of recent advance warning signal (AWS) installations on Bangerter Highway in Salt Lake County. The metrics that are being utilized in this analysis include safety impacts, specifically crash data and red-light running data; as well as an evaluation of the speed differentials at the intersections before and after installation. The purpose of this session will be to present information on the design of the AWS system, the installation of the system, signal timing and controller data for the system, evaluation of the effectiveness to date, and a discussion on warrants and future research.

**5. Freeway Sign Design**
**Track**: Traffic & Safety and ITS/TOC
**Presenters**: John Leonard and Roland Stanger
**Synopsis**: This session will present information on the design, layout, and location of highway signing, with an emphasis on freeway locations. Topics will include changes in the MUTCD, design layout, design standards particular to UDOT, and an overview of the review process.

**6. Design and Construction of ADA Pedestrian Access Ramps**
**Track**: Traffic & Safety and ITS/TOC
**Presenters**: Larry Montoya and Peter Jager
**Synopsis**: This session will cover design and construction of pedestrian access ramps, provide an opportunity to review recent installations, and discuss lessons learned. Topics include: Pedestrian access ramp requirements; construction issues; inventory update; ped ramp evaluation form; and technical infeasibility.

**7. Work Zone Traffic Control, Part 1**
**Track**: Traffic & Safety and ITS/TOC
**Presenters**: John Leonard, Roland Stanger, Carl Johnson and Troy Torgersen
**Synopsis**: This topic will be presented in two back-to-back sessions. **Part 1**is geared toward new engineers and students that have little or no experience with work zone traffic control plans. The session will cover why we need a traffic control plan, what basic elements are required for the varying types (short, medium and long term work zones). Time will be spent reviewing typical applications in Part VI of the MUTCD as well as UDOTs TC sheets. The session will help those attending to better understand the importance of a well thought out traffic control plan and how it benefits the traveling public.

**8. Work Zone Traffic Control, Part 2**
**Track**: Traffic & Safety and ITS/TOC
**Presenters**: John Leonard, Roland Stanger, Carl Johnson and Troy Torgersen
**Synopsis**: This topic will be presented in two back-to-back sessions. **Part 2** will continue where we left off with Part 1. The session will be a "lessons learned" session. Examples of recent projects will be discussed, both the good and the bad. What type of work zone is the best type for a given project? Should lane rental be considered, full road closure, night work etc. will be discussed. How do we enforce the TCP will be discussed to see what has worked and what hasn't. For our maintenance crews we will address new drawings, to be included in the MUTCD, being developed for "First Responder" vehicles such as EMS vehicles. What are they required to carry on their vehicles, how should they set up their traffic control to work on an accident scene etc. This is an area that we have struggled with over the years.

**9. Risk Management and Litigation**
**Track**: Risk Management/Litigation
**Presenters**: Warren Grames, Jim Soper, Steve Combe and Steve Walkenhorst
**Synopsis**: This session will discuss past legal failures and the consequences of them in the areas of Construction, Maintenance, etc. Provided will be a discussion of how to avoid legal pitfalls that end up having you on the hot seat in court. An attorney will be present to allow for an open question and answer period.

**10. What's New or Changing in Environment**
**Track**: Environmental
**Presenters**: Brent Jensen and Greg Punske
**Synopsis**: Training on hot topics such as improved Planning and NEPA linkage; mobile source air toxics, wildlife/safety considerations, reader friendly NEPA documents, etc.

**11. Environmental Document Management**
**Track**: Environmental
**Presenters**: Jerry Chaney and Jeff Berna
**Synopsis**: Training on: Environmental Assessment and Environmental Impact Statement cost & schedule estimation; ePM environmental process; New Categorical Exclusion environmental document development tool that uses smart form and automation for streamlining; Updated user-friendly Environmental Manual of Instruction; and New Environmental Assessment Guidance.

**12. 11400 South EIS - Tools for Developing Collaborative Solutions**
**Track**: Environmental
**Presenters**: Joe Kammerer, Rachel McQuillen, Mary DeLoretto, Remmet DeGroot, Alex Hildebrand, Amalia Deslis, Steve Pouliot
**Synopsis**: The 11400 South EIS recently received a Record of Decision. Come and learn about the various methods and techniques used to work through this controversial project - for example, a cumulative impacts workshop, a comprehensive public involvement program, visual simulations, and the use of GIS throughout.

**13. Stream Channel Permitting-Navigating Murky Waters**
**Track**: Environmental
**Presenters**: Jerry Chaney, Terry Johnson
**Synopsis**: Learn when and why permits are needed, how to obtain them, and other tips when working with streams.

**14. Mountain View Corridor EIS and Tolling**
**Track**: Environmental
**Presenters**: Teri Newell, Sandra Garcia-Aline, Matt Sibul
**Synopsis**: Learn how tolling was considered in the EIS.

**15. Modeling Analysis of Land Use Impact Associated with the Southern Corridor**
**Track**: Environmental
**Presenters**: Greg Punske (FHWA), Jeff Winston (Winston Associates)
**Synopsis**: This session will demonstrate the use of 3-D visualization software to compare the impacts of smart growth land use scenarios with traditional development around the Southern Corridor highway project. This FHWA funded project was undertaken to streamline the evaluation of the land use impacts associated transportation projects.

**16. Bentley Training, InRoads 8.7 Overview**
**Track**: Roadway Design
**Presenters**: Mike Webb (Bentley)
**Synopsis**: Bentley InRoads 8.7: Overview Part I is the first of two lectures that highlights new concepts, methods and advances in Bentley InRoads V8.7. This overview introduces the new Roadway Designer and new component technology behind InRoads Modeling, modeling concepts that will eventually appear in all Bentley Civil products. Constraints, relationships, modeling techniques and multiple port views are all part of this lecture agenda. Future lectures will delve more deeply into functionality and focus on specific 8.7 enhancements.

**17. Bentley Training, InRoads 8.7 Overview (cont) & Using ProjectWise with InRoads**
**Track**: Roadway Design
**Presenters**: Dan Ahern and Mike Webb (Bentley)
**Synopsis**: Bentley InRoads 8.7 Overview Part II (3:30-4:00) is the second of two lectures that highlights new concepts, methods and advances in Bentley InRoads V8.7 This overview introduces new cross section capabilities with component technology as well as cross section integration with InRoads Storm & Sanitary. Additional enhancements on the agenda include geometry, earthworks and drafting notes for InRoads Storm & Sanitary. Future lectures will delve more deeply into functionality and focus on specific 8.7 enhancements.

Using ProjectWise with InRoads (4:00-5:00) This session focuses particularly on the enhancements provided in the 2004 Edition of InRoads. The new capabilities to interact with many more file input/output options from within InRoads directly into ProjectWise is covered in-depth.

**18. Bentley Training, InRoads 8.7: General Roadways**
**Track**: Roadway Design
**Presenters**: Mike Webb (Bentley)
**Synopsis**: Bentley InRoads 8.7: General Roadways focuses on the new Roadway Designer functionality available in InRoads 8.7. Attendees of this remote lecture will get a first-hand look at how roadway models are created, edited and processed using the new Roadway Designer Corridor tools which include options for Corridor Management, Template Drops, Point Controls, End Conditions, Display References, Secondary Alignments, Key Stations, and Create Surface.

**19. Bentley Training, InRoads 8.7: Assembling Templates**
**Track**: Roadway Design
**Presenters**: Dan Ahern (Bentley)
**Synopsis**: Bentley InRoads 8.7: Assembling Templates provides users with a fundamental understanding of template concepts, end components, constraints and assembly. This remote lecture focuses on the decision process used to select existing components and end conditions to create and edit a desired typical section (template). Constraint methods will also be discussed, as well as the different ways in which components can be used within a template.

**20. Bentley Training, InRoads 8.7 Building Components**
**Track**: Roadway Design
**Presenters**: Dan Ahern (Bentley)
**Synopsis**: This remote lecture focuses on creating, editing and manipulating components that comprise a template. Discussion will include simple, constrained, unconstrained and end condition components, as well as the use of null points within components. Emphasis will be directed to constraints on component points that enable complex design scenarios founded on parametric-based design rules. In addition, future component use will be addressed via the InRoads Template Properties tool by adding a linked document that explains the purpose and application of the component.

**21. Bentley Training, InRoads 8.7 End Conditions**
**Track**: Roadway Design
**Presenters**: Mike Webb (Bentley)
**Synopsis**: This remote lecture targets the new Roadway Designer End Conditions functionality, available in Bentley InRoads 8.7, and its use to solve everyday design needs. Prior to Bentley InRoads 8.7, users deployed template exterior

sections, cut/fill tables, material tables and decision tables to solve side slope conditions within a corridor. This lecture addresses how these side slope sections are carried forward into version 8.7. Attendees will also learn how to test end conditions prior to using them in the actual modeling process.

**22. Bentley Training, InRoads 8.7 Cross Sections and Profiles**
**Track**: Roadway Design
**Presenters**: Dan Ahern (Bentley)
**Synopsis**: This remote lecture introduces InRoads users to the new Cross Sections and Profiles interface and command options available in Bentley InRoads 8.7. Attendees will be updated on functionality enhancements and changes in relation to the Create, Annotate, and Update commands for Cross Sections and Profiles.

**23. Bentley Training, InRoads 8.7 Volumes and Quantity Manager**
**Track**: Roadway Design
**Presenters**: Dan Ahern (Bentley)
**Synopsis**:
Volumes: This remote lecture provides an overview of changes made to the InRoads Volumes tools with the release of Bentley InRoads 8.7. Topics include updates to the Volumes interface, Material Features, Material Classifications, End Area Volumes Parameter file and Annotation capabilities.

Quantity Manager I: This Remote Lecture focuses on the basic Quantity Manager workflow. Attendees will learn how to create InRoads features that will be reported by Quantity Manager, manage the Pay Item database, create and edit formulas using the Quantity Formula Manager, and calculate quantities. Attendees will also learn to create reports, as well as import and export data with Quantity Manager. InRoads users attending this lecture will build a basic foundation of product knowledge that will enable them to progress to more advanced techniques and workflows.

Quantity Manager II: This remote lecture enables InRoads users to streamline workflows through development of advanced quantity management and reporting skills. Attendees will learn how to create features in MicroStation that will be reported by Quantity Manager. Other advanced techniques will include managing the pay item database and formulas, quantity calculations, reporting and integrating with AASHTO.

**24. Bentley Training, InRoads 2004 Edition: Geometric ROW Creation from Record Data**
**Track**: Roadway Design
**Presenters**: Mike Webb (Bentley)
**Synopsis**: This session focuses on ROW creation using coordinate geometry (parallel figures/alignments, traverse, and traverse editing) and alignment tools. Attendees will learn how to convert record information to the InRoads database. Other topics include creating ROWs from complex spiral geometry based upon specified station definitions. Time permitting, legal descriptions will also be addressed.

**25. Bentley Training, Haestad StormCAD**
**Track**: Roadway Design
**Presenters**: Mike Webb (Bentley)
**Synopsis**: One of a series of sessions provided by Bentley instructors in the software used by UDOT for roadway design.

**26. ePM**
**Track**: Project Management
**Presenter**: Fred Doehring
**Synopsis**: This session will introduce the long awaited Multiple Network Paths. Over the past year we have developed three new networks; an EA/EIS network, an Orange book network, and a Concept Development network. There have been many changes to the way that projects are set up in ePM and we will cover the highlights of the revised processes.

**27. Local Government Projects - You Know You Love Them**
**Track**: Project Management
**Presenters**: Catherine Cutler, Brett Hadley
**Synopsis**: What's new in Local Government Project Delivery: new Co-Op, new outline for Guidebook, STIP management, new tools for success. A must attend for Project Managers and Consultants.

**28. CEVP Primer**
**Track**: Project Management
**Presenter**: Fred Doehring

**Synopsis**: This session is a basic introduction to CEVP (Cost Estimate Validation Process). CEVP is a risk based method of project cost estimating that was developed in Washington State. We'll cover the basic steps of a CEVP study, the costs of such a study, and some of the potential benefits.

**29. Aging Culverts: Problems and Repairs**
**Track**: Research, Structures, Hydraulics, ROW
**Presenters**: Michael Fazio, Denis Stuhff
**Synopsis**: There are 47,000 culverts in the State system. Older culverts are in various states of deterioration, ranging from relatively minor to serious resulting in a range of functional and safety problems. How to evaluate solutions to deterioration problems using basic culvert design, construction, and maintenance techniques are covered. Those attending will better understand the magnitude of the problem and be better equipped to identify & categorize culverts needing simple repairs from those needing major rehabilitation or replacement. Funding issues are also addressed.

**30. Rapid Bridge Replacement Scanning Tour Reports**
**Track**: Research, Structures, Hydraulics, ROW
**Presenters**: Allen Gerber, Boyd Wheeler, Mike Miles, Rob Wight, Carmen Larrea, Daniel Hsiao
**Synopsis**: From 9/26/2005 to 9/29/2005, Project Development has invited Utah bridge contractors, UDOT bridge engineers, UDOT construction engineers, and UDOT region project managers to visit with NYSDOT engineers and New York local contractors. Our goal was to have NYSDOT engineers and NY contractors sharing their experiences about rapid bridge replacement with the UDOT scanning tour members. We will report on what we have learned.

**31. The top 10 *Modifications to Federal Regulations* for Right of Way and new R/W ePM Data Download Requirements**
**Track**: Research, Structures, Hydraulics, ROW
**Presenter**: Karen Stein, James Baird and Terri Theobald
**Synopsis**: This session is one that Project Managers, Public Involvement Coordinators, Consulting Engineering Firms, and Right of Way Engineers should attend. The session will focus on two main topics; FHWA's "top ten modifications to the Uniform Act Regulations" and new requirements for consultants and or staff R/W Engineers who provide data to be downloaded into the Right of Way ePM system.

The modified Uniform Relocation Act Regulations could have a definite affect on the time it takes to clear right of way, and project budgets. Right of Way involvement at the concept stage is becoming more important if UDOT and or Local Agencies are to remain in compliance with federal regulations. Those who provide information to property owners at any stage of a project should attend this session. And, those who provide Right of Way Summaries for Right of Way should also attend to see what is now required for each summary submitted.

**32. Research Pays Off**
**Track**: Research, Structures, Hydraulics, ROW
**Presenter**: Shana Lindsey
**Synopsis**: The Cost/Benefits of sending UDOT employees to the Annual Transportation Research Board Conference and a look at what new technologies are being implemented. Overview of recent changes to the New Products process and innerweb development for a more efficient means of communication. Highlights from this year's Experimental Features, a look at what is going on in your area. As well as Innovative Projects (such as RapidMapper) and What Research Can Do to Help You - Becoming Another Resource.

**33. Construction Project Delivery List**
**Track**: Construction
**Presenter**: Jesse Sweeten
**Synopsis**: Rollout of a Construction Project Delivery List. Discussion of performance measures for the Construction PDL including measures defined for project schedule, project budget and construction engineering costs with scoreboard vlues for projects on the list.

**34. Spec Writing**
**Track**: Research, Structures, Hydraulics, ROW
**Presenters**: Barry Axelrod, Patti Charles
**Synopsis**: The new "Specification Writers Guide" will be introduced. This guide provides instructions for specification writers contributing to the state of Utah's "2005 Standard Specifications for Road and Bridge Construction," supplemental specifications, and special provisions as well as future versions. The information included in the guide constitutes the Department's approved guidelines for matters of writing style, word and number usage, and formatting. Topics covered during this session will address the following areas. 1) Organization and format of specifications, 2) Abbreviations,

acronyms, and symbols, 3) Writing rules, 4) Lists, tables, figures, and forms, 5) Wording of specifications - Active versus Passive voice, and 6) Other areas related to specification writing. This breakout session will provide a brief introduction to these areas.

**35. Final Inspections for Bridge Projects**
**Track**: Research, Structures, Hydraulics, ROW
**Presenters**: Dan Adams and David Eixenberger
**Synopsis**: This session will cover the final acceptance and inspection of bridge projects. The purpose of these inspections will be discussed along with an explanation of what information is gathered and the responsibilities of key players.

**36. Rapid Mapper**
**Track**: Research, Structures, Hydraulics, ROW
**Presenters**: Daniel Hsiao, Paul Wheeler, and Tony Lau (UDOT); Jesse Anderson and Mike Oldroyd (Carter Burgess); Robert Vashisth and Frank Algarin (RappidMapper)
**Synopsis**: Research Division has reviewed the LD3 system. A new way to get survey information developed by Rappid Mapper. It has potential to be very cost-effective to get the survey job done. Traffic impact by the new technology has been proofed to be significantly less. It captures real world conditions to provide survey data for DOT engineers, consultants, contractors and the public. LD3 system expedites the creation of accurate 3D drawings, which are in the critical path of all projects, and create real world visualization with the use of intelligent pixels.

**37. Documentation and Organization Requirements for Materials Inspection and Testing**
**Track**: Materials
**Presenters**: Pete Negus
**Synopsis**: Presentation will discuss concepts and paperwork requirements regarding the documentation and organization of roadway projects, with emphasis on materials field documentation. Documentation requirements are based on what is outlined within UDOT's Quality Assurance Program and UDOT's Construction and Materials Manuals of Instruction. Discussion will include who should be performing documentation, where it should be stored, what form it should be in and what information it should contain. Will be focused on field crew level application. **Required for UDOT and Consultant field personnel.**

**38. Materials Certification of Compliance Program**
**Track**: Materials
**Presenter**: Troy Peterson
**Synopsis**: Presentation will address the requirements of UDOT's Manufacturer's Certification of Compliance Program as it stands now, the direction and timeframe of the next generation of the program, and how to deal with specific situations in the interim. The discussion will be tailored to those who work in the field directly with the materials that require Certification. **Required for UDOT Construction and Materials, and Consultant field personnel**

**39. Quality Assurance Requirements for Project Closeout**
**Track**: Materials
**Presenters**: Bryan Lee, Tim Biel
**Synopsis**: Presentation will address the overall requirements and expectations to fully comply with the Quality Assurance Program requirements for project materials documentation. We will specifically address common mistakes, expected situations and how to recover lost or non-existent information that is required for Federal Participation. Discussion will be targeting Project Engineer and Field Personnel. **Required for UDOT Construction and Materials, and Consultant field personnel**

**40. Independent Assurance Program**
**Track**: Materials
**Presenters**: Desna Bergold, Tim Biel
**Synopsis**: Presentation will address the concepts and practices that make up UDOT's Independent Assurance program. We will address frequencies, personnel and specific tools and options that can be used to meet requirements. Discussion will be targeting lab personnel and managers at all levels, both state and industry. **Required for UDOT Materials personnel, and some UDOT Construction & Consultant field personnel**

**41. Additional Resources for Construction Management of a Project**
**Track**: Materials
**Presenters:** Stan Adams
**Synopsis**: Presentation will address options for the situation of having more work to do and not enough regular employees to do the work on a construction project. The discussion will include use of consultants, individual technicians and

transportation technicians. It will also address the processes for acquiring these resources, paying for these resources and for dealing with the need for specialized resources. Discussion will be targeted at Project Managers and Project Engineers for both state and industry. **Required for UDOT Construction field crew personnel**

**42. Inspector Qualification Program**
**Track**: Materials
**Presenter**: Jeff Saddler
**Synopsis**: Presentation will address the status and direction of the Inspector Qualification Program as required by Federal Code. This program is in development and the discussion will include UDOT's expectations of who will be included, what their requirements will be and the expected phasing and impact of the implementation. Will discuss where the IQP will be housed, who is responsible and how to find the associated documentation. The discussion will be for all technicians that perform inspection duties and their supervisors. **Required for UDOT and Consultant field personnel, w/ some Materials**

**43. Geotechnical Medley**
**Track**: Geotechnical
**Presenters**: Rich Giraud, Francis Ashland, Jim Higbee
**Synopsis**: Utah Landslides of 2005, presented by Rich Giraud and Francis Ashland (Utah Geological Survey):
The Utah Geological Survey (UGS) documented over 85 landslides in Utah in 2005, many causing extensive damage. Ashland and Giraud will discuss landslides that closed SR-60 (South Weber Drive) in South Weber and SR-14 east of Cedar City as well as other landslide damages and causes. They will also discuss UGS springtime landslide forecasts, how they can be used, and potential for future landslide movement.

Geotechnical Issues with Design/Build Projects, presented by Jim Higbee (UDOT):
UDOT has led the way with D/B transportation projects. This presentation will detail some of the geotechnical aspects of D/B construction including performing an appropriate baseline geotechnical investigation, structuring the geotechnical performance requirements, evaluation of geotech-aspects of technical proposals, and project follow-through. Unique opportunities for research will also be shown.

**44. Ground Improvement and Foundation Engineering: Woodrow Wilson Bridge**
**Track**: Geotechnical
**Presenter**: John C. Volk
**Synopsis**: Mr. Volk is responsible for overseeing ground improvement of the soft clay deposits on the Virginia and Maryland interchanges of the Woodrow Wilson Bridge ($2.5B design-bid-build contract). He will discuss the various ground improvement methods used – wick drains, geotextiles, surcharges, deep mixing ($15M worth), light weight foam concrete, geofoam, and piled embankment. In addition, he will discuss foundations for the structure – large open-ended pipe piles.

**45. Partnering**
**Track**: Construction
**Presenters**: John Parson, Norm Avery, Jim Golden, Brian Morin, Jim McMinimee, Darrell Giannonatti, Rob Wight, Karl Verhaeren, Jeff Saddler
**Synopsis**: This session will provide information on training issues and successes from the Phase 1 training.

**46. Independent Quality – Bridging the Gap Between Owner and Builder controlled Quality Programs**
**Track**: Construction
**Presenter**: John W. Bale (S&ME)
**Synopsis**: When establishing a quality control quality assurance program for a design build project, the use of an independent quality firm is gaining industry awareness. Still in its infancy the independent approach to quality is continuing to evolve and is incorporated to varying degrees by other DOT's. If used correctly, an independent quality firm can be utilized by both the owner and builder to supplement their typical project staff. Through this presentation you will learn the key components of an Owner, Builder and Independent Quality controlled approach. You will learn the benefits and problems associated with each approach from the perspective of Owners, Contractors and Third Party (Independent Quality) firms. You will be presented with various methods and scopes for independent quality approaches. And you will be able to compare costs for each of the historical two primary approaches. Discussion will follow on how correct use of the Independent Quality approach can eliminate the potential cost overlap often associated with the Owner or Builder controlled method. Finally, we will discuss how to implement an independent approach to quality on small to large design build projects.

**47. Construction Cost Analysis and Scheduling**
**Track**: Construction

**Presenter:** David J. Carter, CCM, PBS&J
**Synopsis**: The volatility of Construction Costs have taken center stage with transportation agencies in the past few years, as multiple factors have taken a reasonably stable market and resulted in increases that few had predicted. This presentation will identify and discuss some of the major variables that are impacting construction costs, including materials supply and availability, supply of skilled labor, availability of construction equipment and volume of construction. Additionally, this presentation will examine approaches that agencies are utilizing to work to more accurately predict and contain costs in their construction programs. Factors such as the schedule, work windows and time and cost impacts during construction will also be addressed.

**48. Construction Lessons Learned**
**Track**: Construction
**Presenters**: Dan Young, Jim Golden, Steve Niebergall
**Synopsis**: Region resident engineers discuss problems and solutions on current projects including SR-201 and Provo Canyon.

**49. Terrestrial Habitat Assessments**
**Track**: Environmental
**Presenters**: Mike Perkins and Rick Black
**Synopsis**: The Great Basin Ecosystem is a unique, fragile cold desert ecosystem. The Salt Lake Valley ecosystems are dominated by the Great Salt Lake, a remnant of Lake Bonneville (circa 32,000 years b.p.) that once covered over 20,000 square miles of western Utah, eastern Nevada and southern Idaho, up to 1000 feet deep. Following the catastrophic release of up to 1,000 cubic miles of water (circa 15,000 years b.p.), the Earth's climate warmed evaporating much of the remaining fresh water of Lake Bonneville, leaving a highly saline, mineral rich Great Salt Lake. The Great Salt Lake is a terminal Basin lake in which there is no outlet, and so waters entering the basin can leave by evaporation, concentrating the dissolved minerals and salts even further. Great Salt Lake supports a rich and dynamic biological system of regional, national and global importance. Having no outlet, lake water varies in both level and salinity over time - the combined effects of freshwater inflow from three rivers, precipitation, and evaporation rate. This variation influences the nutrient base and habitats for innumerable plants, invertebrates, reptiles, amphibians, mammals and birds. This mosaic of interdependent habitats includes wetlands ranging from freshwater to hypersaline playas, shorelines and uplands. In the Salt Lake Valley, this system is also connected via the Jordan River to Utah Lake, a fresh water lake to the south.

Within this Great Basin Ecosystem, there are several types of terrestrial, upland habitats associated with the Great Salt Lake, Utah Lake, the Jordan River, and the associated areas between the mountains: Playa, Riparian, Wetlands, Shrublands, Agricultural, and Ephemeral drainages. Each of these habitat types may have a different group of wildlife species associated with it. Habitat Suitability Indices (HSI), provides a NEPA analyst, or a Project Manager with a quantitative method for analyzing impacts from different alternatives, or assessing mitigation needs for impacts from a planned project.

Bringing the USFWS and the UDWR in on the process early provided a working model for the Mountain View Corridor project to assess potential impacts to wildlife habitat from different alternatives.

**50. What if? In Construction**
**Track**: Construction
**Presenters**: Todd Emery and Joe Gregory (FHWA)
**Synopsis**: "What IF". . . A look into the thought and decision making process of the Federal Highway Administration (FHWA) in regard to the "What IF's" of Contract Administration, Construction, and Materials issues, including Pre-Award and Post-Award Procedures.

**51. New And Great Stuff From Procurement Services**
**Track**: Miscellaneous
**Presenters**: Jim Phillips and Team
**Synopsis**: In the changing world of supply and sourcing management come see the new and innovative ways Procurement is working to meet your needs. Learn about the new levels of delegated authority and the impact on your project's procurements. See the 'new' face Procurement has on UDOTs' web site. Find new ways to get information, help or contracts.

This session will offer a brief overview of the changes that have taken place in the procurement process over the last year. Find out how these changes can make your job easier and how to avoid delays because of misunderstood processes.

**52. UDOT/AGC Panel Discussion**
**Track**: UDOT/AGC Roundtable

**Presenters**: A panel of both UDOT and AGC representatives
**Synopsis**: A panel discussion regarding issues of mutual interest to the AGC and UDOT.

**53. Cost Estimating**
**Track**: Engineer's Estimates
**Presenters**: Steve Anderson, Howard Anderson, Gary Lindley
**Synopsis**: A dual perspective on creating Engineer's Estimates, from both the agency and the contractor point of view.

**54. I-15 HOT Lanes Study, and UDOT Managed Lanes Update**
**Track**: Planning, Programming, Highway Financing
**Presenters**: Matt Swapp, Linda Riley, Jerry Mugg, Jon Nepstad
**Synopsis**: Introduction to Managed Lanes. A discussion of the UDOT's Managed Lanes Study which provides a review of managed lanes from around the country. The second part of the presentation will focus on the HOT Lane concept. UDOT recently completed a recent HOT Lane feasibility study for I-15 in Salt Lake and Utah counties. The findings will be discussed.

**55. UTA's Commuter Rail Project**
**Track**: Planning, Programming, Highway Financing
**Presenters**: Steve Meyer (UTA), and Rick Campagna (UDOT)
**Synopsis**: The development of the Commuter Rail project has involved the coordination and cooperation of UTA, UDOT, UPRR, and the 14 cities and three counties in the project corridor. UTA and UDOT have jointly developed a plan for coordinating the design and construction efforts for the Commuter Rail, Legacy Parkway, I-15 widening in Davis County, I-15 NOW project, and the I-15 Beck Street bridge projects. This coordination has developed engineered solutions to accommodate all projects within the available Right Of Way, and defined the roles and responsibilities for the design and construction of future corridor improvements. The resulting plan demonstrates how working together we can meet current project needs and provide for an improved transportation capacity of the corridor for both future highway and transit projects in the most cost effective manner.

**56. Project Prioritization and Asset Management**
**Track**: Planning, Programming, Highway Financing
**Presenters**: Ahmed Jaber, Kim Schvaneveldt
**Synopsis**: The Department has some new tools and procedures to prioritize projects for the Long Range Plan and the STIP. The preservation projects (Goal 1- Take Care of What We Have) are prioritized using Asset Management Systems. The capacity projects (Goal 4 – Increase Capacity) are prioritized using a weighted factor methodology. This session will present the history, law, reasoning, challenges, & methodology involved with prioritizing projects to be included in the Long Range Plan and STIP.

**57. Highway Financing and Impacts of the New Highway Bill**
**Track**: Planning, Programming, Highway Financing
**Presenters**: Linda Hull, Max Ditlevsen
**Synopsis**: This session will provide an overview of the new Highway bill – SAFETEA-LU. It will cover what's new in the bill, highlight provisions and changes, including earmarks designations, and discuss how UDOT plans to coordinate with project sponsors and other stakeholders. The other portion of this presentation will address the preliminary impact to the UDOT STIP - changes made in the federal aid estimates, and the status of our state funding.

**58. What Project Managers Should Know of Traffic Forecasts**
**Track**: Planning, Programming, Highway Financing
**Presenters**: Matt Rifkin, Walt Steinvorth
**Synopsis**: This presentation would disseminate the results of a recent UDOT QIT related to travel modeling. Unlike typical presentations about travel modeling, this presentation would discuss the value of travel forecasts and keep the presentation relevant to a broad audience of project managers, NEPA reviewers, transportation planners, and traffic engineers.

**59. Legacy Parkway and Preserve Update**
**Track**: Planning, Programming, Highway Financing
**Presenter**: John Thomas
**Synopsis**: This session will provide attendees an update on the Legacy Parkway and Preserve. Speakers will detail where UDOT is with the lawsuit, the design of a parkway, changes in construction procurement and the Nature Preserve.

**60. Spotlight on Region 1**
**Track**: Spotlights

**Presenters**: Cory Pope, Kevin Griffin, Andy Neff
**Synopsis**: Region One's presentation will focus on several items: 1) Our Maintenance Division's response to spring flooding, 2) The implementation of third-party public information managers for the construction phase of our projects and 3) spotlight on dedicated Region One employees with an emphasis on Employee of the Year, Leader of the Year and Career Achievement Award Winner. The presentation will focus on how our employees collaborate and work together to take Region One performance to a new level.

**61. Spotlight on Region 2**
**Track**: Spotlights
**Presenters**: Lisa Wilson, Jesse Anderson, Burt Compton, Carter Burgess**,** Joe Kammerer, John Montoya
**Synopsis**:
Continuous Flow Intersection (CFI) 3500 South and Bangerter Highway: The presenters will cover: description, operation, brief history and background of continuous flow intersections; issues related to maintenance and construction of this type of intersection; particular challenges related to pedestrian usage on CFI; Methods to train drivers how to use the intersection; and site specific design for the 3500 South and Bangerter intersection.

Construction Manager General Contractor (CMGC)/Construction Manager At Risk (CMAR): CMGC/CMAR is a new contract delivery method available to UDOT. John and Joe will describe this method and discuss its use on two projects in Region II. Redwood Road 2100 South to 3500 South and 11400 South I-15 Interchange.

**62. Spotlight on Region 3**
**Track**: Spotlights
**Presenters**: Tracy Conti, Geoff DuPaix
**Synopsis**: Region Three had its share of unique challenges this year. We will discuss how we have worked together with the contractors and communities to meet challenges for our Provo Canyon highway project, I-15 carpool expansion and Midway Main Street projects. We will also discuss the explosion on U.S. 6 in Spanish Fork Canyon. A brief question and answer period will follow the presentation.

**63. Spotlight on Region 4**
**Track**: Spotlights
**Presenters**: Myron Lee
**Synopsis**:
1. Rubbleize / overlay of I-15 (Rick Torgerson, Jim McConnell, Scott Goodwin)
2. St. George Boulevard PI process and CAC concept (Myron Lee, Tamerha Maxwell, Jim McConnell)
3. Monument Valley (Kim Manwill, Russ Tangren, Mike Miles)
4. Devil's Canyon (Kim Manwill, Russ Tangren, Mike Miles)
5. Southern Corridor, Atkinville, Future Airport (Tamerha Maxwell)
6. Flood year - St. George, Sevier River, Iron County (Scott Munson and Robert Dowell)
7. U.S. 6 Update (Mike Miles)

**64. Spotlight on Operations**
**Track**: Spotlights
**Presenters**: Tracy Conti, Dave Kinnecom, John Leonard, Rich Clarke
**Synopsis**: A look at the people and organization of UDOT's most diverse and widespread group, and at some of the things they are doing.

**65. Spotlight on Systems Planning and Programming**
**Track**: Spotlights
**Presenters**: see below
**Synopsis**:
Bill Lawrence - Opening remarks, introductions
Sharon Briggs - Bicycle & Pedestrian
Kelli Bacon - Cartography
Jerry Arnold - Highway Referencing
Russ Scovil - Pavement Condition
Doug Logsdon - Photolog
Kevin Nichol - Planning
Walter Steinvorth jr - Planning Modeling
Lee Theobald - Traffic, Data Collection & Analysis

**66. Spotlight on Project Development, OR, "Reality Show" - The Best Apprentice in Project Development.**
**Track**: Spotlights
**Starring**: Managers in Project Development (Stan Burns, Darrell Giannonatti, Shana Lindsey, Todd Jensen, Brent Jensen, and Lyle McMillian)
**Synopsis**: Come watch the divisions within Project Development give progress reports on what they have done to provide excellent customer service and compete for who will be the Best Apprentice for UDOT's Donald Trump (aka Jim McMinimee).

**67. Spotlight on ACEC/AGC**
**Track**: Spotlights
**Presenters**: Rich Thorne and Michael Smith
**Synopsis**: These two organizations work closely with UDOT in ways that many might not be aware of. Both organizations are part of national level trade associations. This session will present information on the national organizations as background and will focus on the many things the local members work on together with UDOT.

**68. P.I. or Pavement: Evaluating the Outcome and Cost Effectiveness of Public Involvement**
**Track**: Public Involvement
**Presenters**: Dave Smith, Eileen Barron, Evelyn Tuddenham
**Synopsis**: Including public input and participation in state and local community projects is not a new concept, but the development of formalized processes to achieve meaningful public involvement is relatively new. While UDOT is beginning to define and refine it's own public involvement processes we have yet to seriously explore techniques for evaluating the outcome and cost effectiveness of those efforts.

This workshop will examine the history of Public Involvement at UDOT, as well as the ways UDOT currently evaluates its public involvement activities and what those evaluations show. Case studies will be used to explore methods for evaluating PI in terms of objectives, outcome and cost effectiveness. Attendees will leave the workshop equipped with questions to ask before and after PI efforts, evaluation technique instructions, and a list of evaluation tools.

**69. What do Utahns think of UDOT?**
**Track**: Public Involvement
**Presenter**: David L. Smith, APR (PPBH)
**Synopsis**: This session will provide project managers and engineers with a real-world view of what the public thinks about UDOT. Information will be pulled from numerous phone surveys, focus groups and "man on the street" interviews conducted in the last two years for UDOT projects.

**70. The Spectrum of Public Participation: Finding the Right PI Fit for your Project**
**Track**: Public Involvement
**Presenters**: Eileen Barron and Justin Smart
**Synopsis**: This session will provide project managers and engineers with a method to determine the right amount of public involvement for transportation projects using the Public Participation Spectrum as a framework. Example UDOT projects will be used to demonstrate how the appropriate level of PI can be applied on a project-by-project basis through smart planning at project outset. Specifically, examples will highlight a step-by-step process to determining the right level of PI.

**71. Public Involvement: Working with Emotional Stakeholders**
**Track**: Public Involvement
**Presenter**: Lori Isenberg
**Synopsis**: The "ideal" stakeholder is logical, thoughtful and willing to listen, share, and learn. However, many times it is the more emotional and irrational stakeholders who attend public meetings and other activities. This interactive session will help you learn how to prevent these people from sabotaging your project and get them to think and act more logically. Lori Isenberg, CPF, will lead this session with members of the Mountain View Corridor EIS project team sharing how they successfully used this training with upset stakeholders.

**72. UDOT'S Weather Operations and ITS: A Merging of Technology and the Human Intellect**
**Track**: Maintenance
**Presenter**: Ralph Patterson
**Synopsis**: The Weather Operations and Road Weather Information System (RWIS) program is housed within the State of Utah's Traffic Operation Center (TOC). The TOC is UDOT'S central facility, charged with statewide planning, deployment and maintenance of the ITS technologies, as well as dissemination of traffic and traveler information. The main focus of the Weather/RWIS operations is to generate detailed site-specific forecasts and provide meteorological data and support for UDOT operations as a whole. Support is tailored towards; winter maintenance personnel, construction crews, TOC

operations, managers, and decision makers, all in an effort to provide the highest level of service in a cost-efficient manner. To satisfy this goal, UDOT employs a unique and novel approach by staffing the TOC with an onsite meteorological consulting forecasting firm, along with a UDOT staff Meteorologist to manage the program.
The Weather Operations program consists of two major components; ITS (RWIS), and Atmospheric Science (meteorological support). This presentation investigates how these two components work in a synergistic fashion to serve UDOT'S ever changing weather needs.

**73. Passing the 'Headlines' Test: Ethical Practices for Public Employees Involved with Sourcing and Supply Management**
**Track**: Leadership and Organizational Issues
**Presenters**: Jim Holfeltz and Jim Phillips
**Synopsis**: Almost daily around here, anymore, it's hard to pick up a newspaper without finding a story sighting unethical behavior by a public employee. Too often highlighted are activities revolving around questionable procurement practices engaged in by state, city or local employees, not just elected officials.

Could you be headed for notoriety based on an up-coming newspaper article or column?
Even though your job title isn't Purchasing Agent or Buyer, are you at risk?

This session will discuss how to be aware of and avoid compromising situations in dealing with Suppliers who are vying for business with or who currently provide products or services to UDOT, even if you're only on the fringe.

Issues to be addressed during this Session include:
• Perceived Impropriety; including Beyond the Clock
• Our Responsibility to the State and Public (our Constituents/Customers)
• Conflict of Interest
• Issues of Influence; External as well as Internal
• Supplier Relationships
• Reciprocity
• Gifts and Gratuities; what they really are and the solicitation of or receipt thereof.
• Applicable Laws
• Signs Auditors Look For

**74. Raising the Bar with High Performance Teams**
**Track**: Leadership and Organizational Issues
**Presenters**: Sydne Jacques, Christin Bott
**Synopsis**: All high performance, highly functioning teams share four important characteristics.
a) High Performance Teams start with a vision of greatness and the talent to make it possible.
b) High Performance Teams coordinate their effort with great communication.
c) High Performance Teams hold themselves in alignment.
d) High Performance Teams act like a team.
In this workshop we will eat cookies and address these four points to help provide you and your team with necessary skills to become a truly High Performance Team.

**75. COMMITTED Leadership**
**Track**: Leadership and Organizational Issues
**Presenter**: Rick Murdock
**Synopsis**: COMMITTED Leadership is training model designed specifically for Managers, Supervisors and Leaders. The model covers Communication, Ownership, Mentoring, Measures, Institutional Memory, Time Management, Team Building, Emotional Intelligence and Delegation. This hour-long workshop will hit the highlights of the training model and demonstrate key communication, mentoring, and time management skills.

**76. Dealing with Difficult People**
**Track**: Leadership and Organizational Issues
**Presenter**: Becky Collins
**Synopsis**: Everyone is irritable or indecisive at times. But, some people are so difficult that they make others' lives and work a strain. Dealing with difficult people is easier when you develop coping skills for dealing with them, without trying to change them. This session focuses on identifying strategies for dealing with such people.

**77. Contracting: Which Road To Take**
**Track**: Miscellaneous

**Presenters**: Tracie Montano and Gaye Hettrick
**Synopsis**: You need help. You need a specific service or product. You need a consultant or contractor. How do you know the correct method for filling your requirement?

This session will offer a contrast and comparison of the sourcing and supply management functions offered by Consultant Services and Procurement.

Learn the similarities and differences between the two groups. Learn how to determine which to choose from for your project. Learn how to avoid unnecessary and costly delays in acquiring a product or service provider.

During this session Leaders from Consultant Services and Procurement will explain who they are, under what authority their group works and what services they offer. They will also introduce their Teams and give a basic overview of their Sections.

**78. Single Point Urban Interchange - Then & Now**
**Track**: Miscellaneous
**Presenter**: T. Wallace Hawkes, P.E. (URS)
**Synopsis**: A video Film about the development and operation of Urban Interchanges followed by some line discussion. A time allowance will be made for an "Interactive" Q and A session.

**79. University Students Session**
**Track**: Miscellaneous
**Presenter**: Rick Murdock
**Synopsis**: One room is reserved for Tuesday morning 8:00am for this meeting/orientation.

**80. Zero Based Budgeting**
**Track**: Research, Structures, Hydraulics, ROW
**Presenter**: Cameron Kergaye
**Synopsis**: This year Project Development experimented with a different budgeting method known as “Zero Based Budgeting”. Most Government entities, including UDOT, use a budget allocation system known as “Baseline Budgeting”. In Baseline Budgeting each Division Manager is allocated the same budget as they received the previous year and all Managers then negotiate for additional resources. In Zero Based Budgeting each Division Manager is not automatically given the same budget as the previous year. Each Manager must justify their need for each FTE and for current expense dollars. This session will outline the benefits and challenges of Zero Based Budgeting and describe its implementation in Project Development.